



# Georgia Secretary of State Brian P. Kemp

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## **180-7-.01 Preamble.**

In order to assure the public that proper and adequate surveys, maps, plats and writings are executed in connection with property, for whatever purpose, Technical Standards are hereby established. These standards establish the minimum degrees of accuracy, completeness and/or quality in the several areas of concern in order to be considered acceptable.

Authority O.C.G.A. Sec. 43-15-1. **History.** Original Rule entitled "Examinations" adopted. F. and eff. June 30, 1965. **Amended.** ER. 180-7-0.7-.01 entitled "Preamble" adopted. F. and eff. July 31, 1975. **Amended:** Permanent Rule adopted. F. Nov. 4, 1975; eff. Nov. 24, 1975. **Amended:** F. Aug. 9, 1990; eff. Aug. 29, 1990.

## **180-7-.02 Land Titles and Location.**

(1)(a) Every parcel of land whose boundaries are surveyed by a land surveyor should be made conformable with the record title boundaries of such land. The land surveyor prior to making such a survey shall acquire the following prerequisite data: deeds, maps, certificates of title, centerline data, right of way data, adjacent descriptions, and other boundary line locations in the vicinity as necessary or available. The land surveyor shall compare and analyze all of the data obtained and make most nearly correct legal determination possible of the position of the boundaries of such parcel. He shall make a field survey traversing and connecting all available monuments appropriate or necessary for the location, and coordinate the facts of such survey with the pre-determined analysis. Not until then shall the monuments marking the corners or such parcel be set, and such monuments shall be set in accordance with the full and most satisfactory analysis obtainable. It shall be the responsibility of the land surveyor to evaluate conformity with adjacent tracts for overlaps and gores and to report the same on all maps, plats, and reports.

(b) In the event that the land surveyor determines that it is not possible to make the survey of a parcel of land conformable with the record title of such land or that it is not possible to coordinate the predetermined analysis with the field survey, the surveyor shall explain the reason for his determination and shall denote in indisputable language, the source and reason for the corners, lines, and/or areas as shown on the plat. Such reasons may include, but are not limited to, the following: Disputed, property lines or areas; possession lines; acquiescence; adverse possession; unrecorded deeds; proposed purchase (new parcels); dubious and nebulous deed descriptions; and any adverse claim. This paragraph shall not be construed in any way to allow the surveyor to evade his/her responsibilities under the law.

(2) Any description written for conveyance or other purpose, defining land boundaries, shall be complete and accurate from a title standpoint, providing definite and unequivocal identification of the lines or boundaries, and definite recitals as to use or rights to be created through such descriptions. A description shall include the general location of the tract or lot with sufficient accuracy such that the tract can be readily located on the ground. The land lot, district, section, militia district number (in Headright Grant areas), city (if known to be within the city limits) and county shall be called out in said description. Description shall start at a point of commencement and/or a point of beginning that can be readily re-established. The description shall include the names of adjoining subdivision and/or property owners on all lines, as can be determined at the time of commencement of the survey through public records such as the county tax assessor and/or clerk of court records. (A title search is not required for this.) A metes and bounds description shall describe all courses in logical sequence around a tract or lot in a clockwise direction such that the ending point is the beginning point, the exception to this would be a description for a linear easement. The monument at each corner shall be described. All lines adjacent to streets, roads, or other rights-of-way shall be referenced to these and all pertinent distances and curve data shall be listed (arc length, chord length, chord bearing and radius) in addition to the parcel's area. All descriptions, being a form of report, shall bear the land surveyor's name, address, seal and signature.

Authority O.C.G.A. Secs. 15-6-67, 43-15-1, 43-15-2, 43-15-4, 43-15-6. **History.** Original Rule entitled “Identification Number” adopted. F. and eff. June 30, 1965. **Amended:** ER. 180-7-0.7-.02 entitled “Land Titles and Location” adopted. F. and eff. July 31, 1975. **Amended:** Permanent Rule adopted. F. Nov. 4, 1975; eff. Nov. 24, 1975. **Amended:** F. Aug. 9, 1990; eff. Aug. 29, 1990. **Amended:** F. May 11, 2001; eff. May 31, 2001. **Repealed:** New Rule of same title adopted. F. Feb. 25, 2008; eff. Mar. 16, 2008.

### **180-7-.03 Measurements-Horizontal.**

Measurements shall be made with instruments capable of attaining the required accuracy for the particular problem involved. Angles and distances shall be measured to obtain an accuracy of not less than 1:10,000 in urban or suburban areas and 1:5,000 in rural areas except as follows:

(a) The allowable positional tolerance of property corners with respect to each other within a given survey may not be greater than:

1. 0.1 foot in urban blocks wherein buildings can be erected along the property line, or where high land values so warrant;

2. 0.25 foot in suburban subdivisions interior blocks and/or suburban lots or parcels;

3. 0.50 in rural areas, except as follows:

(i) Closer tolerance is required where land value in rural areas is increased by adjacency to major highway intersections or thruway complexes, building congestion, oil or mineral rights or any other reason;

(ii) When a parcel of land is extremely long or narrow, closer tolerance is required on the shorter narrow dimensions to qualify acceptable corner positioning in relation to the narrow width;

(iii) Where original surveys in rural areas were made with a compass, retracement may be made by compass in order to "follow the footsteps" of the original surveyor. However, such retracement also must be reduced to a non-magnetic traverse so that the error of closure as specified above is obtained.

Authority O.C.G.A. Secs. 43-15-1, 43-15-2, 43-15-4, 43-15-6. **History.** Original Rule entitled "Grading" adopted. F. and eff. June 30, 1965. **Amended:** ER. 180-7-0.7-.03 entitled "Measurements-Horizontal" adopted. F. and eff. on July 31, 1975. **Amended:** Permanent Rule of same title adopted. F. Nov. 4, 1975; eff. Nov. 24, 1975. **Amended:** F. Aug. 9, 1990; eff. Aug. 29, 1990. **Repealed:** New Rule of same title adopted. F. Feb. 25, 2008; eff. Mar. 16, 2008.

## **180-7-.04 Measurements-Vertical.**

- (1) A circuit of levels between precise bench marks or a circuit closed upon the initial bench mark shall not differ more than 0.02 foot multiplied by the square root of the number of miles in the circuit, and in no case to exceed 0.05 foot.
- (2) Levels run for control to topographic mapping of a site or project shall have an error of closure of not less than 0.1 foot per square root of the number of miles.
- (3) Topographic maps and plats, delineated either by contours or by points with indicated elevation, shall be of such accuracy that no more than 10% of the area covered shall be in error by more than one half (1/2) of the contour interval shown. This degree of accuracy applied to maps and plats prepared from field work and those compiled by photogrammetric techniques.

Authority O.C.G.A. Secs. 15-6-67, 43-15-1, 43-15-2, 43-15-4, 43-15-6. **History.** Original Rule entitled "Board Review: Passing Grade" adopted. F. and eff. June 30, 1965. **Amended:** ER. 180-7-0.7-.04 entitled "Measurements — Vertical" adopted. F. and eff. July 31, 1975. **Amended:** Permanent Rule of same title adopted. F. Nov. 4, 1975; eff. Nov. 24, 1975. **Amended:** F. Aug. 9, 1990; eff. Aug. 29, 1990. **Amended:** F. July 10, 1991; eff. July 30, 1991. **Amended:** F. Sept. 16, 2003; eff. Oct. 6, 2003. **Repealed:** New Rule of same title adopted. F. Feb. 25, 2008; eff. Mar. 16, 2008.

## **180-7-.05 Monuments.**

(1) In order to prevent boundary conflicts, the public must have assurances that the corners of real property boundaries as determined from an accurate survey are durably marked with survey monuments that may be identified on the ground with the aid of the survey plat. In meeting this objective, surveyors must meet the following minimum standards of accuracy, completeness and quality.

(2) The land surveyor shall set monuments as defined herein, unless monuments already exist or cannot be set due to physical obstructions. Said monuments shall be set at all boundary corners. Those monuments that cannot be set due to physical obstructions shall have a reference monument set. Said reference monument shall be referenced on the plat by bearing and distance from the true position of said monument. Also, said reference monument shall be set far enough away from the true corner so as not to be confused with the position of the true corner.

(3) All monuments set shall be composed of a durable material and shall incorporate a ferrous material to aid in location by magnetic locators. Said monuments shall have a minimum length of 18 inches. Longer monuments are required in soils less likely to hold and maintain the true position of the monument. Said monuments composed of solid metal rods shall have a minimum cross sectional area of 0.2 square inches. Concrete, composite or stone monuments shall have a minimum dimension of 3 inches by 3 inches. Monuments placed at land lot corners, district corners or county corners shall if a rod have a minimum diameter of 5/8 inches, a pipe of 1 inch diameter or a concrete or stone monument of not less than 4 inches square.

(4) Every boundary monument set shall be identified with a durable marker or cap bearing the Georgia registration number of the land surveyor in responsible charge or the name of the business entity and/or Certification of Authorization number (COA #).

(5) If a boundary corner falls in a hard surface such as concrete or asphalt; alternate monumentation may be used that is durable and identifiable.

(6) For irregular boundaries such as non-engineered roads, rivers, streams, lakes, beach, etc. a dimensioned meander or survey line may be used. If a meander or survey line is used, monuments shall be set at the meander or survey line's terminus points on real property boundary lines.

(7) All monuments found or placed shall be described on the survey plat. The corner descriptions shall state the size, material and cap identification of the monument as well as whether the monument was set or found.

Authority O.C.G.A. Secs. 43-15-1, 43-15-2, 43-15-4, 43-15-6. **History.** Original Rule entitled "Time of Examination" adopted. F. and eff. June 30, 1965. **Amended:** ER. 180-7-0.7-.05 entitled "Monuments" adopted. F. and eff. July 31, 1975. **Amended:** Permanent Rule of same title adopted. F. Nov. 4, 1975; eff. Nov. 24, 1975. **Amended:** F. Aug. 9, 1990; eff. Aug. 29, 1990. **Repealed:** New Rule of same title adopted. F. Feb. 25, 2008; eff. Mar. 16, 2008.

## **180-7-.07 Maps and Plats.**

All maps, plats and similar documents shall conform to the following minimum standards and specifications:

(a) Material.

1. Any such surveys, maps, or plats shall be clearly legible.
2. The minimum line widths and letters or character heights delineated on such maps or plats shall be as follows:
  - (i) Maps or plats drawn on 8½ inch by 11 inch or 8½ inch by 14 inch tracings shall have a minimum line width of 0.010 inches and a minimum letter or character height of 0.080 inches;
  - (ii) Maps or plats drawn on 11 inch by 17 inch tracings shall have a minimum line width of 0.010 inches and a minimum letter or character height of 0.080 inches; or
  - (iii) Maps or plats drawn on 17 inch by 22 inch or 24 inch by 36 inch tracings shall have a minimum line width of 0.013 inches and a minimum letter or character height of 0.080 inches.

(b) Caption. The maps or plats shall have a title or name, which shall be contained in the caption, and the caption shall also provide the following information:

1. The name of the current owner of the property or the entity who authorized the survey;
2. The county, city, town or village, land district and land lot, and subdivision, if the property line lies within a particular subdivision;
3. The date of plat preparation;
4. The date(s) of field survey;
5. The scale, stated and shown graphically;
6. The name, address, telephone number, and registration number of the registered land surveyor or the statement that he is the county surveyor and is not required by law to be a registered surveyor; and
7. All reproductions of original maps or plats shall bear the original signature, in black ink, of the registrant placed across the registration seal, in order to be a valid or recordable map or plat.

(c) Size. Maps and plats shall not be less than 8½ inches by 11 inches and not larger than can be recorded in the county of record without folding. In counties using microfilming procedures, when a map or plat is filed for record, the original drawing, which shall not be larger than 24 inches by 36 inches, shall be submitted to the clerk for microfilming and a legible copy, which shall not be larger than 17 inches by 22 inches, shall be filed for record; provided, however, that a full-size positive copy of the original may be tendered and used for microfilming. The clerk shall enter the filing date, plat book



number, and page number on the original drawing and return the original drawing to the land surveyor or the person filing the same for record.

(d) Data. All maps or plats shall be made in a professional manner and in accordance with the standards of good drafting procedures and shall show the following information, as specified:

1. The direction and distance from a point of reference to a point on the boundary of the individual survey, and such additional data as may be required to relocate the boundary point from the point of reference with the same degree of accuracy required of the parcel surveyed. The point of reference shall be established, monumented position which can be identified or relocated from maps, plats or other documents on public record;

2. Bearings of all lines or angles at all corners and angle points of the boundary or lot lines, and distances of all boundary or lot lines, and area of the parcels expressed in acres or square feet;

3. The closure precision of the field survey as the ratio of one foot to the traversed distance in which an error of one foot would occur and a statement as to the method of adjustment. The closure may be stated as follows:

“The field data upon which this map or plat is based has a closure precision of one foot in \_\_\_\_ feet, and an angular error of \_\_\_\_ per angle point, and was adjusted using rule”;

4. The closure precision of the data shown on the map or plat. The closure may be stated as follows: “This map or plat has been calculated for closure and is found to be accurate within one foot in \_\_\_\_ feet”;

5. The width and the former widths, if pertinent, of all rights-of-way adjacent to or crossing the property or adjacent to any point of reference;

6. All easements and apparent encroachments, if pertinent;

7. In the case of curved lines, the curve shall be defined by curve data to include the radius, arc length, chord bearing, and distance of regular curves. Chord distances and directions shall be given for irregular curves;

8. All land lot lines, land district lines, land section lines, and city, county, and state boundaries intersecting or adjacent to the surveyed property indicated by lines drawn upon the map or plat with appropriate words and figures;

9. All corner markers and markers of pertinent reference points fully described and indicated as to the material or types, whether set or found;

10. An arrow to indicate the principal meridian and a notation as to the reference of bearings to magnetic north, astronomic north, or grid north. A grid north reference shall indicate the zone;

11. All linear distances shown on maps or plats shall be horizontal;

12. All angular directions shall be represented in degrees and minutes. Where plats state or surveys require accuracy in excess of 1 in 5000, the angular directions shall be represented in degrees, minutes, and seconds. All angular directions shall be referenced to the principal meridian;

13. A statement to indicate the type of equipment used to obtain the linear and angular measurements used in the preparation of the map or plat;

14. The names of adjacent property owners on all lines, as can be determined at the time of commencement of the survey through public records such as the county tax assessor and/or clerk of court records. (A title search is not required for this.)

15. All water boundaries shown in sufficient detail to clearly identify the survey tract and the adjoining tract;

16. The character of any and all evidence of possession clearly stated, and the location of such evidence carefully given in relation to the surveyed boundary lines, including all apparent easements and right-of-way; and

17. Any features within or along the boundary located as requested by the client, or in conformity with the rules or requirements of any mortgagor or insurer, provided the technical standards of such rules or requirements are not less than those provided for by this chapter.

Authority O.C.G.A. Secs. 15-6-67, 43-15-1, 43-15-2, 43-15-4, 43-15-6, 43-15-19, 43-15-22. **History.** Original Rule entitled "Engineers-in-Training" adopted. F. and eff. June 30, 1965. **Amended:** ER. 180-7-0.7-.07 entitled "Maps and Plats" adopted. F. and eff. July 31, 1975. **Amended:** Permanent Rule of same title adopted. F. Nov. 4, 1975; eff. Nov. 24, 1975. **Amended:** F. Aug. 9, 1990; eff. Aug. 29, 1990. **Repealed:** New Rule of same title adopted. F. July 10, 1991; eff. July 30, 1991. **Repealed:** New Rule of same title adopted. F. Aug. 12, 1993; eff. Sept. 1, 1993. **Amended:** F. Sept. 12, 2002; eff. Oct. 2, 2002. **Repealed:** New Rule of same title adopted. F. Feb. 25, 2008; eff. Mar. 16, 2008.

## **180-7-.08 Violations.**

The Board may initiate action in cases where a person's actions are in violation of the law beyond reasonable doubt.

Authority O.C.G.A. Sec. 43-15-30. **History.** Original Rule entitled "Engineering Examination" adopted. F. and eff. June 30, 1965. **Amended:** ER. 180-7-0.7-.08 entitled "Violations" adopted. F. and eff. on July 31, 1975. **Amended:** Permanent Rule of same title adopted. F. Nov. 4, 1975; eff. Nov. 24, 1975. **Amended:** F. Aug. 9, 1990; eff. Aug. 29, 1990.

### **180-7-.09 Global Positioning Systems.**

It shall be acceptable practice to incorporate the use of Global Positioning Systems (commonly known as GPS) equipment into any survey. The precision of all measurements made with such equipment must, at a minimum, meet all other precision standards required otherwise by law or rules under Chapter 180-7. When using GPS equipment in the course of a survey, the Land Surveyor shall state on the face of the plat, or within the report in cases where there is no plat, the following:

- a. A note stating what portion (or all) of the survey was performed using GPS equipment.
- b. The type of GPS equipment used, including manufacturer and model number, and whether single or dual frequency receivers were used.
- c. The type of GPS survey that was performed, such as static, real time kinematic ("RTK"), network adjusted real time kinematic, etc.
- d. A note that discloses the precision of the GPS work done, either in relative positional accuracy, vector closure, or other mathematical expression chosen by the Land Surveyor.

Authority O.C.G.A. Secs. 43-15-1, 43-15-2, 43-15-4, 43-15-6. **History.** Original Rule entitled "Land Surveying Examination" adopted. F. and eff. June 30, 1965. **Amended:** F. Dec. 22, 1966; eff. Jan. 9, 1967. **Amended:** No Rule adopted as ER. 180-7-0.7-.09. F. and eff. July 31, 1975. **Repealed:** Permanent Rule repealed. F. Nov. 4, 1975; eff. Nov. 24, 1975. **Amended:** New Rule entitled "Global Positioning Systems" adopted. F. Feb. 25, 2008; eff. Mar. 16, 2008.

## **180-7-.06 Coordinates and Triangulation.**

- (1) The use of state plane coordinates may be incorporated in any land survey.
- (2) State plane coordinates used and shown on surveys shall meet the requirements of O.C.G.A. Sections 44-4-1 through 44-4-31.

Authority O.C.G.A. Secs. 43-15-1, 43-15-2, 43-15-4, 43-15-6. **History.** Original Rule entitled "Examinee Information" adopted. F. and eff. June 30, 1965. **Amended:** ER. 180-7-0.7-.06 entitled "Coordinates and Triangulation" adopted. F. and eff. July 31, 1975. **Amended:** Permanent Rule of same title adopted. F. Nov. 4, 1975; eff. Nov. 24, 1975. **Amended:** F. Aug. 9, 1990; eff. Aug. 29, 1990. **Repealed:** New Rule of same title adopted. F. Feb. 25, 2008; eff. Mar. 16, 2008.